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TORREYA

May, 1903

NOTES ON THE STRAND FLORA OF GREAT
INAGUA, HAITI AND JAMAICA

BY JOHN W. HARSHBERGER

Great Inagua lies in latitude 21° north and between longitude 73° and 74° west, and is the most southerly of the Bahama Islands. It is forty-five miles in length and from seven to seventeen miles in breadth. Two sandy bays on the leeward, or western side of the island afford safe anchorage for all kinds of steam and sailing vessels. Man-of-war Bay is the northern one, while Matthewtown is situated on the southern one, and is the entrepôt of the island. The anchorage is some distance from the shore and affords about five fathoms of water. The shores of the southern bay are rocky, with scattered sandy beaches formed by the ground-up coral rock. The rock is of aeolian formation, similar to that found in other Bahama islands.* Along the edge of the sea the surface erosion of the rocky strand is most striking and characteristic. The rocks are honeycombed with holes, pits and cavities of all sizes, locally known as "banana holes." The following plants were noted on the strand during the call of the steamer Belvernion at Matthewtown on July 1, 1901. Growing in small rock pockets influenced by the salt spray, *Portulaca oleracea* L. var. *parvifolia* was gathered. Forming a second line of plants, the seaside grape, *Coccoloba uvifera* L., *Tournefortia gnaphalodes* R. Br., *Bucida Buceras* L., *Rhachicallis rupestris*, DC. may be said to be character plants.† Together, these species

* Northrop, Alice R., Flora of New Providence and Andros. Mem. Torrey Club, 12: 2. 1902.

† The writer owes the determination of his West Indian collection of plants to Dr. I. Urban, of the Berlin Botanic Garden, to whom his thanks are due.

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occupy the treeless sea strand formation and form the Portulaca-Coccoloba association, speaking ecologically.

The thicket formation on the strand consists of the association of *Phyllanthus epiphyllanthus* L., with cladodes six inches long, three quarters of an inch wide, *Acacia Farnesiana* Willd., *Tournefortia volubilis* L., *Xylosma buxifolium* A. Gray, *Opuntia* sp. and *Urcehites suberecta* Muell. Arg., a climbing plant which grows over the bushes composing the thicket.

The sidewalks of the main street of Matthewtown are planted with *Casuarina equisetifolia* Forst., which reaches a height of about thirty feet and affords a scanty shade from the sun-glare. The flamboyant tree, *Poinciana regia* Bojer, also occurs here and there along the streets, while as ruderal plants the writer picked up *Abutilon Indicum* Don, *Stachytarpheta Jamaicensis* Vahl and *Cassia sericea* Sw. Growing in the somewhat neglected gardens, the botanist notes *Cordia Sebestena* L., the anaconda tree of the negroes, *Thespesia populnea* Soland., *Lawsonia inermis* L., *Cocos nucifera* L., *Agave* sp., *Carica Papaya* L. and *Eucalyptus Globulus* Lab.

The north coast of Haiti is about sixty miles from Great Inagua across the Windward Passage. Cape Haitien is the most important city on the north coast and lies in a beautiful bay open to windward and protected by a long coral reef upon which in December, 1492, one of the caravels of Columbus was wrecked. The town is surrounded by mountains two thousand feet high, while farther inland, mountains eight thousand feet in elevation are encountered. One of the most favorable localities for botanizing is in a valley back of the town through which a limpid stream of water flows. The following plants were noted there as herbs or woody species along the roadside, viz., *Palicourea Pavetta* DC., *Salvia micrantha* Vahl, *Lepidium Virginicum* L., *Leonurus Sibiricus* L., *Sida acuta* Burm., *Hamelia patens* Jacq., *Tephrosia purpurea* Pers., *Spermacoce laevis* Lam., *Achyranthes aspera* L. var. *obtusifolia* Lam., *Centrosema Virginianum* Benth., *Rauwolfia canescens* L., *Solanum aculeatissimum* Jacq., *Hibiscus Boryanus* DC., *Hibiscus vitifolius* L., *Vinca rosea* L., *Parthenium Hysterophorus* L. and the cosmopolitan *Argemone Mexicana* L.

Climbing over the herbs and other plants, *Plumbago scandens* L. forms an element in the roadside vegetation.

The plants of the highways leading into Port-au-Prince, the capital of Haiti, differ materially from those collected along the roads on the north coast. The following plants were found along the southwestern suburban roads, viz., *Cordia serrata* (L.) Gürke., *Commelina Virginica* L., *Echites umbellata* Jacq., *Echites Neriandra* Griseb., *Wedelia Ehrenbergii* Schlecht., *Sida acuta* Burm., *Parthenium Hysterophorus* L., *Spermacoce laevis* Lam., *Barleria lupulina* Lindl., *Acalypha alopeuroidea* Jacq., *Bouchea Ehrenbergii* Cham., *Leucaena glauca* Benth., *Cassia sericea* Sw., *Moringa pterygosperma* Gaertn. *Momordica Charantia* L. is the only climbing plant gathered and it is extremely common, growing over other plants and the fences. Higher up on the hillsides along the bridle-paths, *Acacia macracantha* H. & B. and *Bauhinia variegata* L. occur in the thickets.

The plants found by the writer in the streets of Aux Cayes on the south coast of Haiti are worthy of mention in connection with the enumeration of the above wayside species. Aux Cayes lies on a restricted, low-lying coastal plain and during heavy rains the streets are flooded with water. *Argemone Mexicana* L. and *Lantana Camara* L. are common weeds. *Cleome spinosa* Jacq., var. *pungens* Willd., *Cassia occidentalis* L., *Solanum mammosum* L., and *Malachra* sp. are typical ruderal plants. The old moss-grown walls of deserted buildings are covered with patches of a small herb, *Pilea microphylla* Liebm., while growing in the marshes near the principal wharf, the white mangrove, *Laguncularia racemosa* Gaertn. and a sedge, *Fimbristylis ferruginea* Vahl, are the principal character plants.

The harbor of Port Antonio, Jamaica, is entered by two channels separated from each other by Navy Island and its outlying coral reefs. The western channel is passable only to small sailing craft, while the eastern channel between Navy Island and a tongue of the mainland is navigable by the largest ocean-going steamers. Navy Island is used to pasture cattle upon, and hence it is grass-grown with only a few trees upon it and these grow near the shore line. *Laguncularia racemosa* Gaertn., the almond

tree, (*Terminalia Catappa* L.), *Cocos nucifera* L. and *Anona muricata* L. were the arborescent species collected by the writer on this island. *Ipomoea Pes-caprae* Sw. is the character plant of the low beaches, while *Lantana trifolia* L., *Solanum torvum* Sw., *Solanum Jamaicense* Mill., *Bidens leucantha* Willd., and *Wedelia carnosa* Pers. are species that have withstood destruction from cattle. The marshy places of the island support *Mariscus rufus* H.B.K. and a sedge, *Fimbristylis spadicea* Vahl.

Located at the extremity of the peninsula of land between the east and the west harbors is an old abandoned fort. The rocks immediately in front of the grass-grown sward about the fort are honeycombed by the waves. On these rocks projecting over the sea and in storms wet by the spray that is tossed up from beneath, a few plants seem to thrive, viz., *Wedelia carnosa* Pers., *Coccoloba uvifera* L., *Ruellia tuberosa* L., *Crotalaria incana* L. and *Plumeria* sp. Hanging over the rocks and lying prostrate on the ground, *Borrchia arborescens* (L.) DC. completes the list of observed strand plants.

Little has been done on a comparative study of the floras of the several Bahama islands and that of the Greater Antilles. Our knowledge as yet is very fragmentary and this article is presented as in part a contribution to a comparative study of the flora of the West Indies.

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OBSERVATIONS ON ETIOLATION

BY CARLTON C. CURTIS

The position recently taken by Dr. MacDougal* as to the action of light upon growth must find ample support from the results obtained in every laboratory. I doubt not that it is a common experience that better illustrations of etiolation are obtained under feeble illumination than in darkness. It has always been a source of surprise to me to note the amount of light that

* Influence of Light and Darkness on Growth and Development. Mem. N. Y. Bot. Garden, 2:—, 1903.